

3D Mobile Mapping

Dave Henderson

GIS National Sales Manager

Topcon Positioning Systems



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Overview

Total Mapping Solution

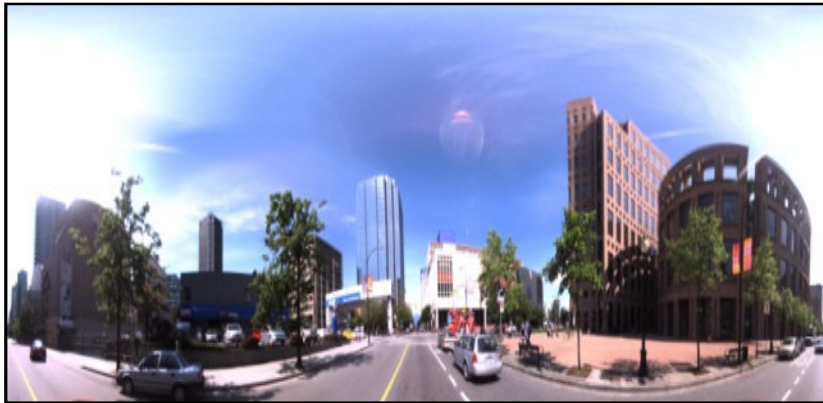
- Rapid non invasive method of capturing 3D positioning and video log data
- **Fast:** Reduce weeks of data collection
 - Too a few hours
- **Efficient:** High accuracy at roadway speeds
- **Safe:** Map from a vehicle
 - Not from the roadway



Mobile Mapping Advantages

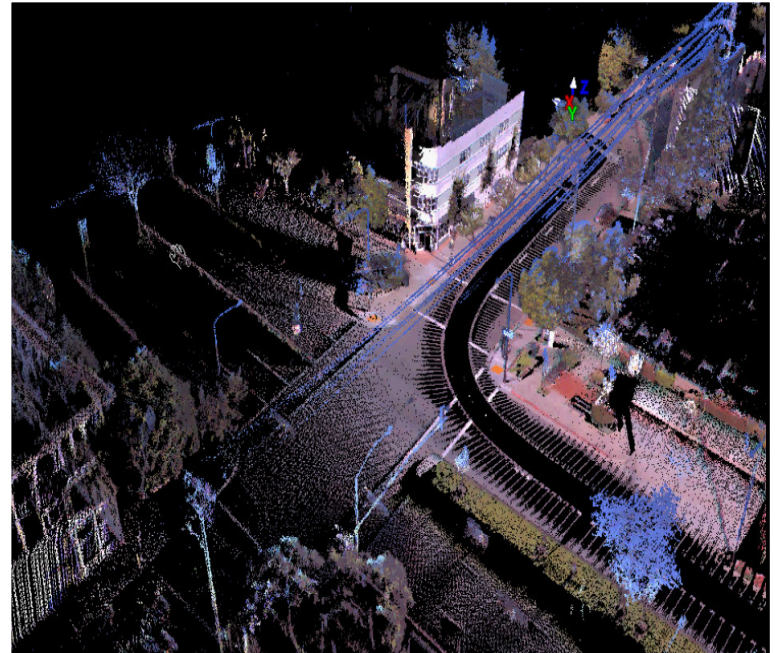
Easy to Use

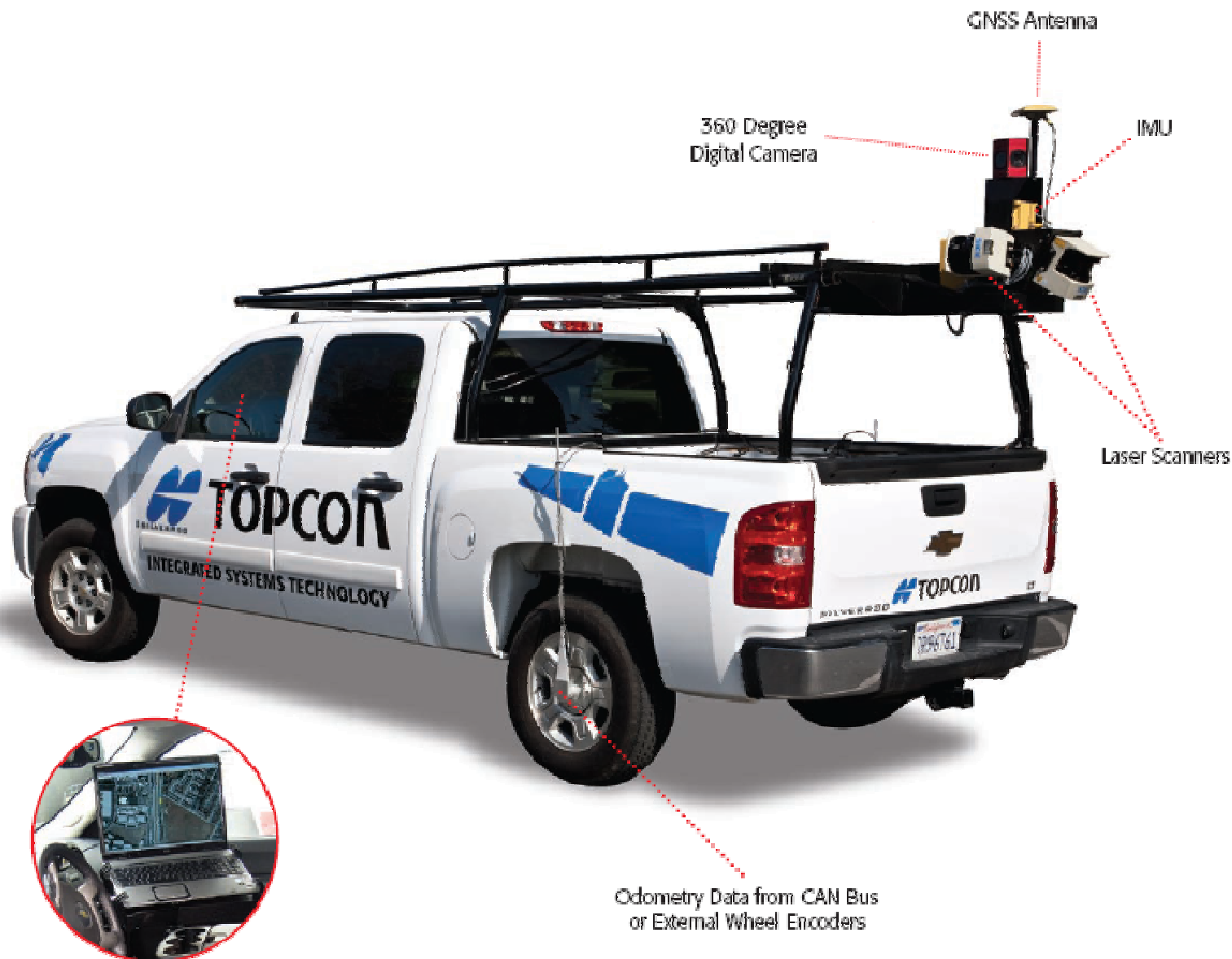
- **Complete** - Solution Out-of-the Box
Hardware / Software
- **Compact** - Highly integrated design
- **Scalable** - Add new sensors , as needed



Mobile Mapping Advantages

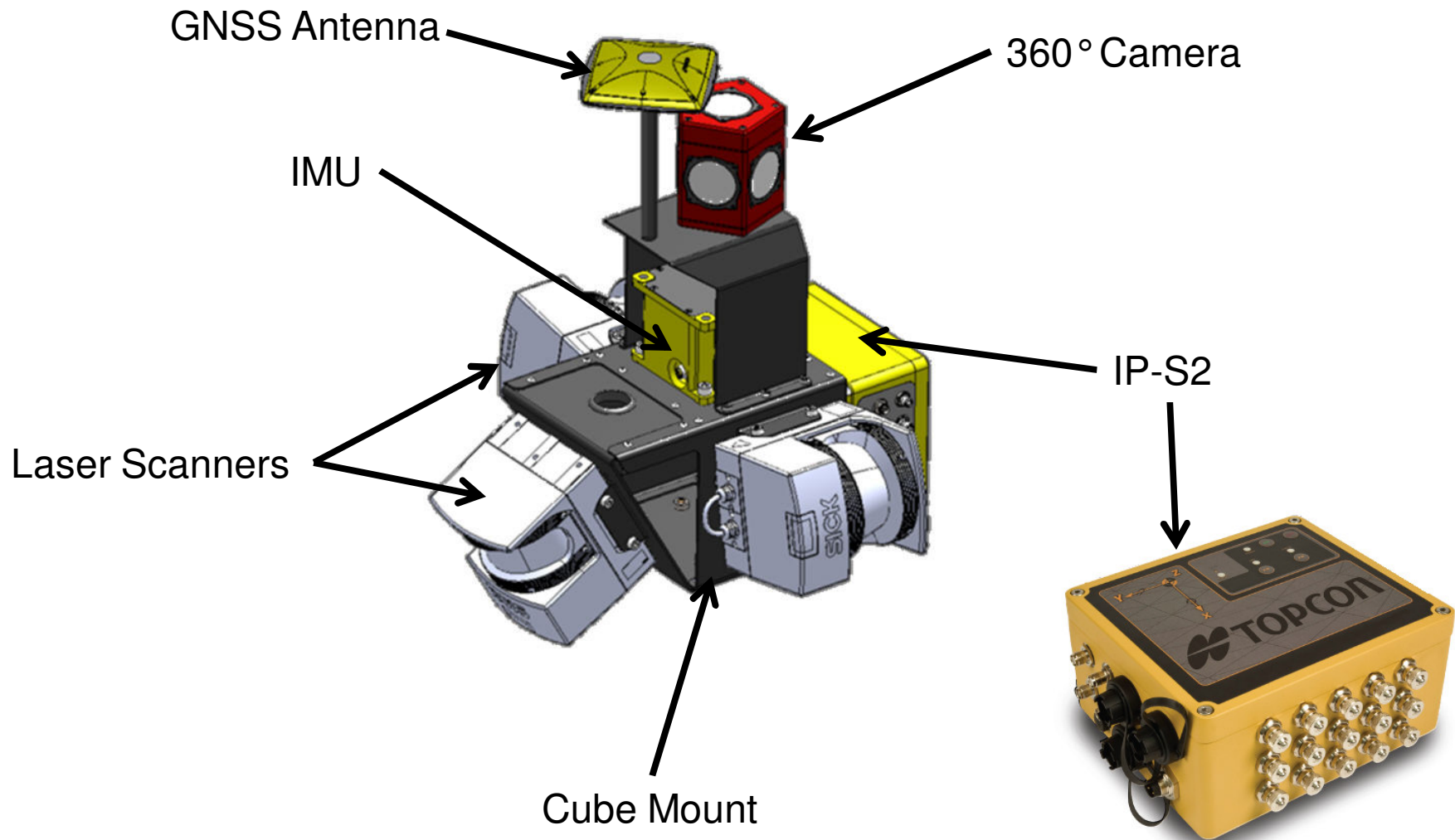
- **Import / Export Data Formats**
- **GIS Data Exchange**
Shape Files and DBF





Web Browser Interface for IP-S2 Data
Logging and Application Software

Mobile Mapping Technology



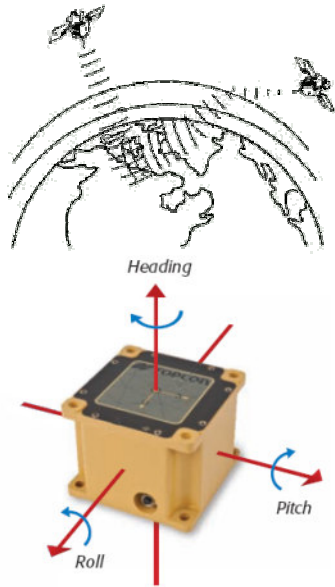


Laptop PC

Connected to IP-S2 via Ethernet and 1394b (FireWire)

A computer is required with use of the IP-S2 to ensure connectivity and health of all sensors as well as for data logging purposes.

How does it work?

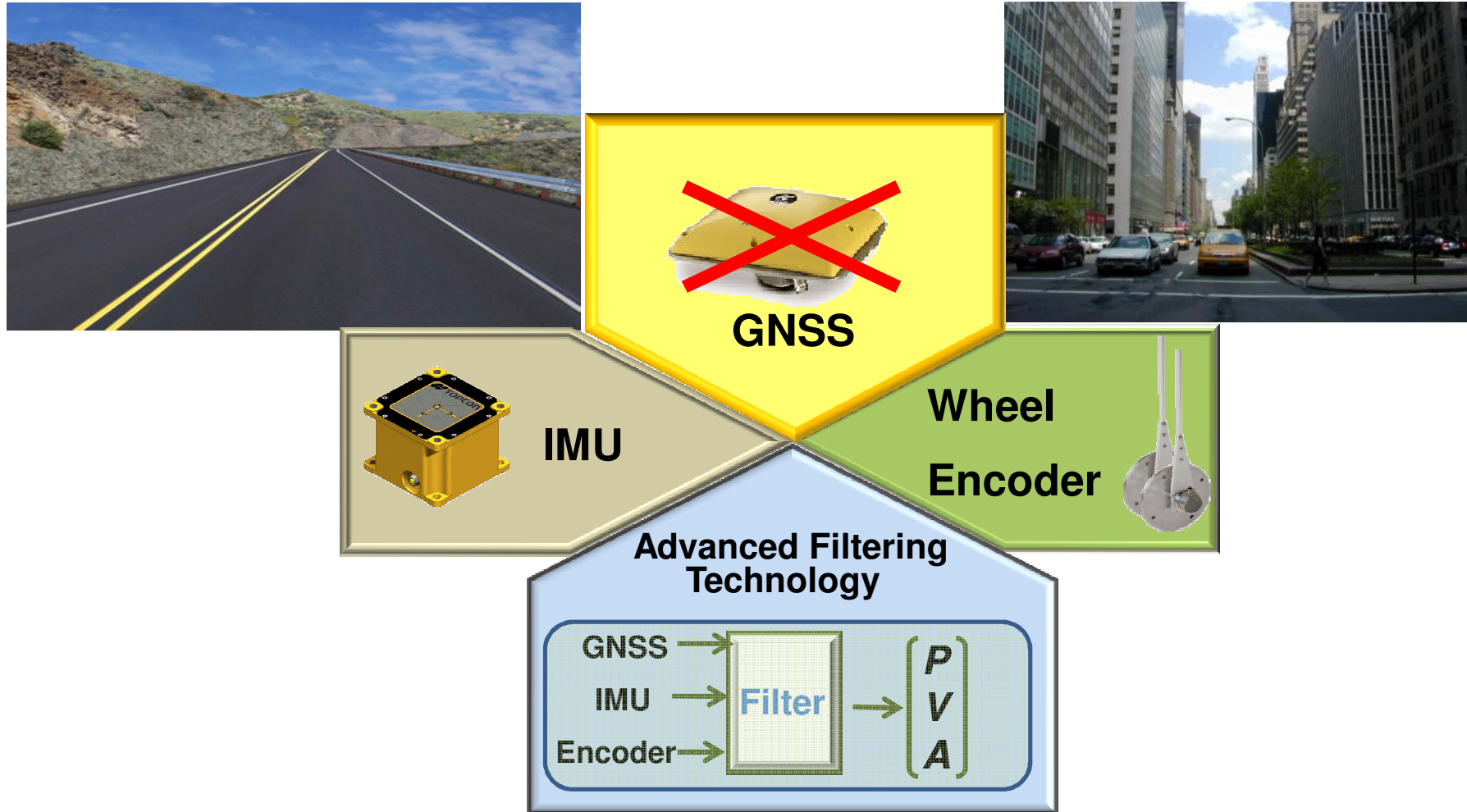


GNSS Receiver: position information
Latitude, Longitude and Altitude

IMU (Inertial Measurement Unit): vehicle attitude
Roll, Pitch and Heading

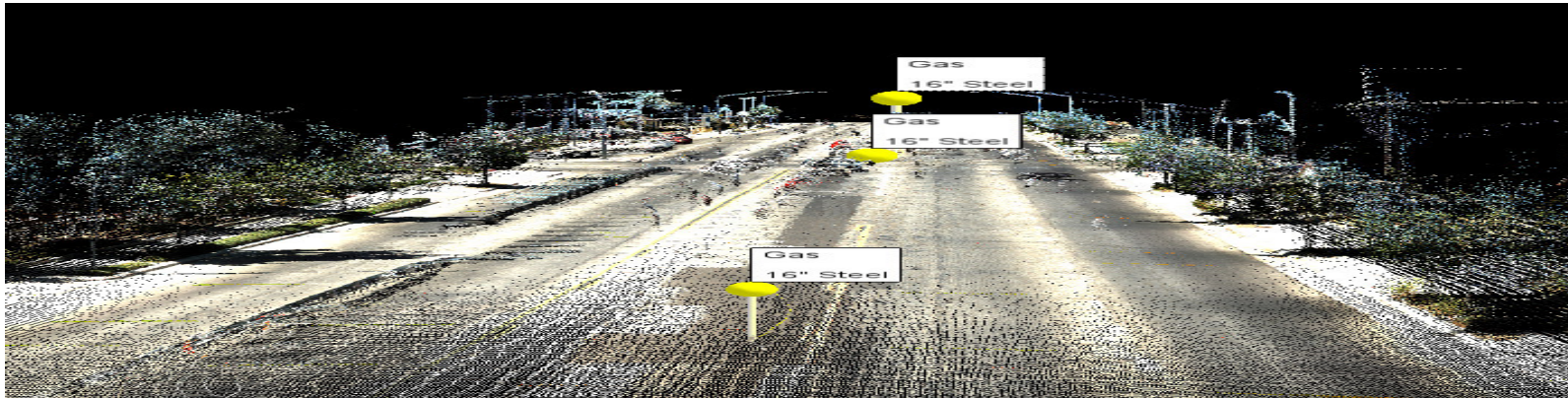
Wheel encoders, CAN bus: Vehicle Odometry
Estimate the velocity and position based on known location

Accurate Navigation When GNSS is Obstructed



IP-S2 Applications

- ✓ Accurate geospatial system maps
- ✓ Expansion studies
- ✓ Risk management
- ✓ Environmental reporting
- ✓ Local condition assessment for repair operations



IP-S2 Applications

- Power Utility Mapping
 - ROW
 - Pole inventory / Joint Use Audit
 - Risk Management
 - QC
 - Vegetation Management
- Infrastructure and Asset Management
 - Utility structure location
 - Condition
 - Compliance
 - Regulatory/Safety/Environmental

IP-S2 Applications

- Roads / Streets / Highway Mapping
 - 3D Surface Conditions
 - Inventory Pavement conditions
 - Change Detection over time
- Disaster response planning
 - FEMA
- Railway Corridor Mapping

✓ Dynamic colorized 3D Point clouds



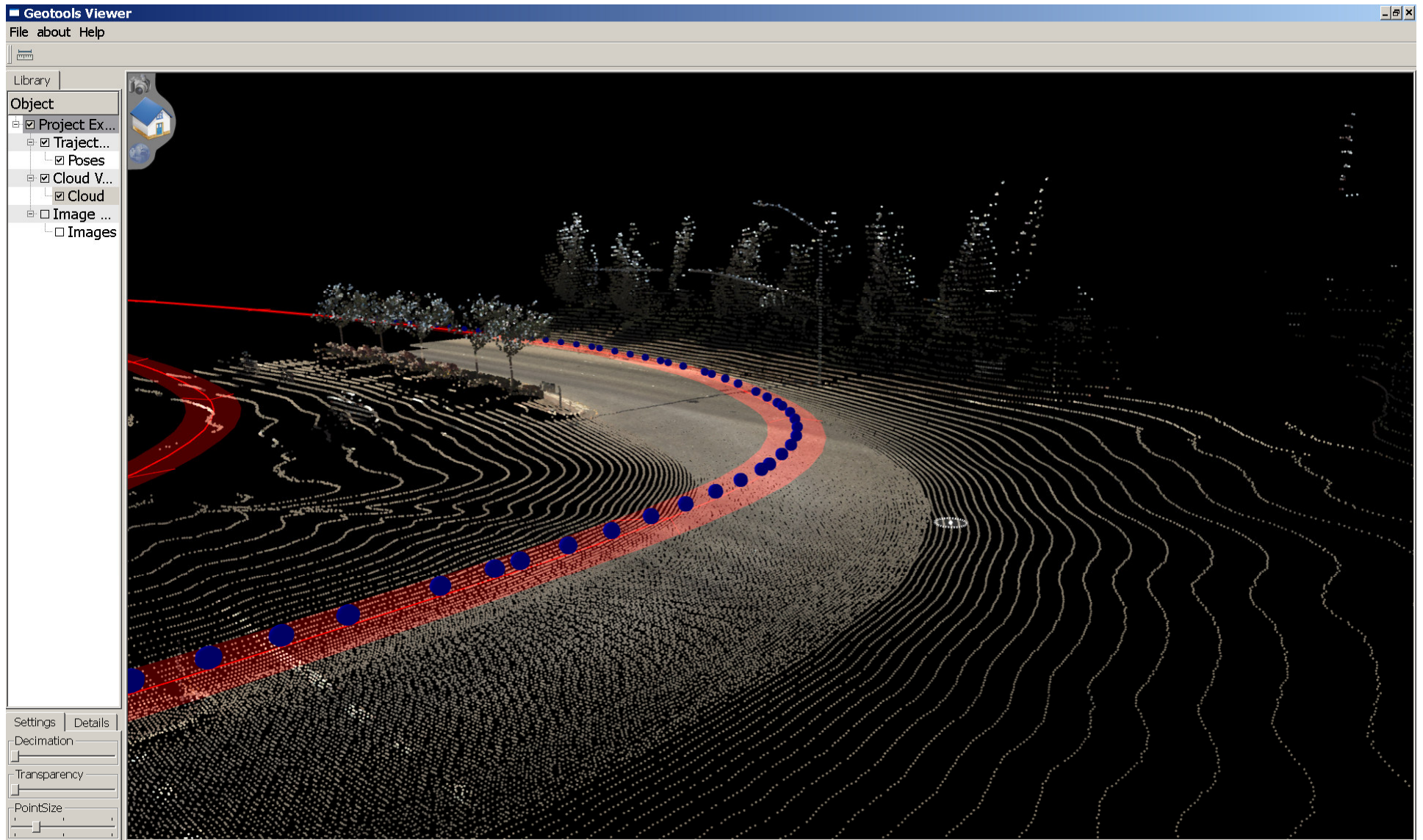
✓ 360° Images

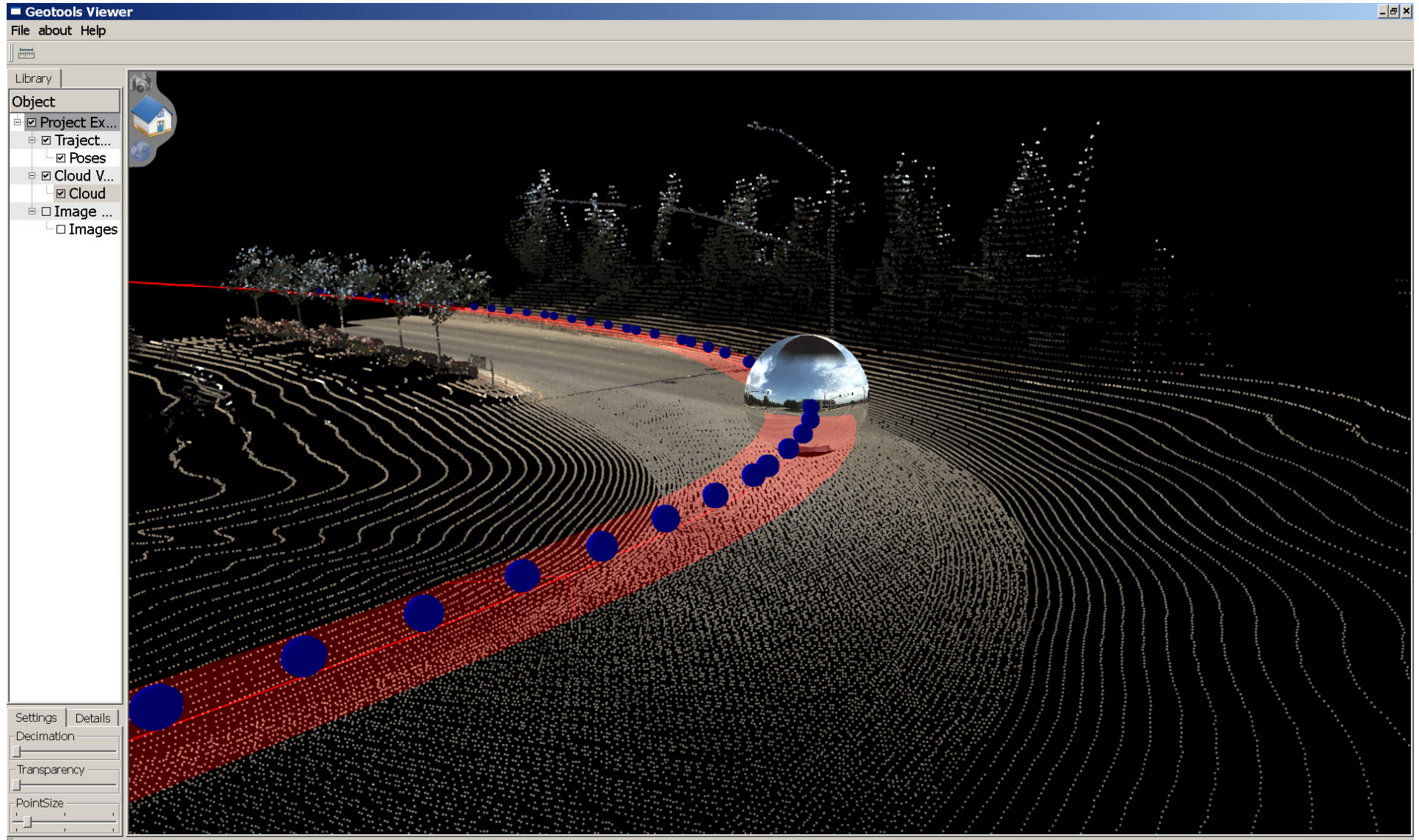


✓ GIS Compatible



View Map of Data Collection Run





Use 360° Images & Point Cloud to Locate Features



Take Measurements use Point Cloud and the Image

Geotools Viewer File about Help

Library

Object


- ☒ Project Explorer_0
 - ☒ Trajectory Viewer
 - ☒ Poses
 - ☒ Cloud Viewer
 - ☒ Cloud
 - ☒ Image Viewer
 - ☒ Images

Settings Details

Decimation

Transparency

PointSize

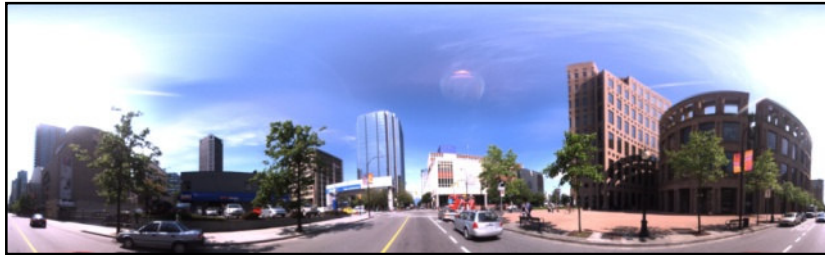


Dist: 3.6763974m	
Pnt. A ...	
total	3.6763973
north	-1.9101781
west	3.1346664
up	-0.2024435
Pnt. A ...	
X	-2654736.5
Y	4298878.1
Z	3879838.9
Pnt. B ...	
X	-2654739.7
Y	4298877.3

- ✓ Import GIS Shapefiles or DBF
- ✓ Capture Accurate Feature Positions from Point Cloud
- ✓ Add / Edit Point, Line & Area Features / Attributes
- ✓ Export updated Shapefiles or DBF



360° Images



Point Cloud



ESRI Data Tables

sstruct.shp	
Property	Value
abc CODE	struct
abc TYPE	none
abc DIAMETER	0.35
abc MATERIAL	steel
123 DEPTH	9.67
123 RIM_ELEV	45
123 INV_IN	5.6
123 INV_IN2	7.8
123 INV_OUT	6.7
123 INV_OUT2	7
abc STATUS	<Null>

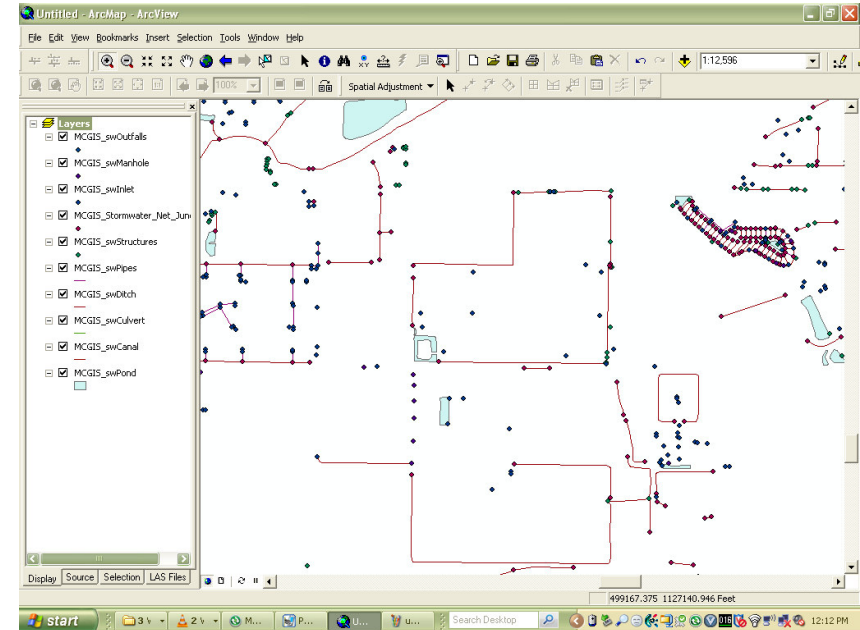
Attributes

+

Measurements

+

DBF



Questions?



Contact Information

Holman's - Tempe, AZ

Yon Egusquiza

Ken Shipley

Topcon Positioning Systems

Dave Henderson

GIS National Sales Manager

dhenderson@topcon.com

TOPCON IP-S2 Video

<http://www.topconpositioning.com/products/mapping-and-gis/mobile-mapping/ip-s2.html>